

General

Title

High body mass index (BMI) follow-up: percentage of children ages 2 through 17 years old who had documentation of weight classification at an outpatient care visit during the measurement year.

Source(s)

Quality Measurement, Evaluation, Testing, Review, and Implementation Consortium (Q-METRIC). Basic measure information: documentation of BMI percentile and weight classification for children. Ann Arbor (MI): Quality Measurement, Evaluation, Testing, Review, and Implementation Consortium (Q-METRIC); 2015 Apr. 50 p.

Measure Domain

Primary Measure Domain

Clinical Quality Measures: Process

Secondary Measure Domain

Does not apply to this measure

Brief Abstract

Description

This measure is used to assess the percentage of children ages 2 through 17 years old who had documentation of weight classification at an outpatient visit during the measurement year.

BMI is a measure of weight for height and is calculated by dividing weight by height squared. BMI percentile for children is calculated based on the age and sex of the child and is a screening tool used to identify children and adolescents who are underweight, normal weight, or who have excess weight (further categorized as being overweight or obese). Tracking BMI percentile allows providers to assess a child's weight status and weight trajectory over time and to monitor children who have abnormal BMI percentiles. A higher percentage of documentation of weight classification indicates better performance.

Rationale

Obesity in children is associated with a broad spectrum of serious health issues, including obstructive sleep apnea, asthma, nonalcoholic fatty liver disease, type 2 diabetes mellitus, depression, orthopedic problems, and skin conditions (Barlow, 2007). While childhood obesity rates have stabilized over the past decade, the percentage of young children and adolescents who are overweight or obese remains high (Ogden et al., 2014). For the 2011–2012 period, nearly 32% of children in the United States were reported to be either overweight or obese (having a body mass index [BMI] greater than or equal to 85th percentile on sex-specific age-for-growth charts), and 17% were obese (having a BMI greater than or equal to 95th percentile) (Ogden et al., 2014).

Health risks and body fat levels are proportionate (Barlow, 2007). BMI is a cheap and easy initial screen for evaluating the health, growth, and development of children. Expert committee recommendations state that for children, BMI should be calculated and plotted at least annually and the classification of weight should be integrated with growth patterns, family history of obesity, and medical risks (Barlow, 2007). Used as a screening tool, BMI can raise concerns that prompt further assessment of clinical information and guide treatment of specific health issues (Barlow, 2007; Speiser et al., 2005). While BMI-for-age percentile does not provide a direct measure of adiposity, it does correlate reasonably well with percentile rankings of directly measured percent body fat in children. Because BMI changes with age, percentile scores based on age- and sex-specific norms are used to monitor growth (US Preventive Services Task Force [USPSTF], 2010).

Entrenched environmental factors such as the ubiquity of processed foods and sugary drinks coupled with lack of physical activity make pediatric obesity a challenging health problem to treat. However, addressing weight problems early reduces the risk of serious and persistent health issues and sets children on course for a healthy adulthood.

Evidence for Rationale

Barlow SE, Expert Committee. Expert committee recommendations regarding the prevention, assessment, and treatment of child and adolescent overweight and obesity: summary report. *Pediatrics*. 2007 Dec;120(Suppl):S164-92. [PubMed](#)

Ogden CL, Carroll MD, Kit BK, Flegal KM. Prevalence of childhood and adult obesity in the United States, 2011-2012. *JAMA*. 2014 Feb 26;311(8):806-14. [PubMed](#)

Quality Measurement, Evaluation, Testing, Review, and Implementation Consortium (Q-METRIC). Basic measure information: documentation of BMI percentile and weight classification for children. Ann Arbor (MI): Quality Measurement, Evaluation, Testing, Review, and Implementation Consortium (Q-METRIC); 2015 Apr. 50 p.

Speiser PW, Rudolf MC, Anhalt H, Camacho-Hubner C, Chiarelli F, Eliakim A, Freemark M, Gruters A, HersHKovitz E, Iughetti L, Krude H, Latzer Y, Lustig RH, Pescovitz OH, Pinhas-Hamiel O, Rogol AD, Shalitin S, Sultan C, Stein D, Vardi P, Werther GA, Zadik Z, Zuckerman-Levin N, Hochberg Z, Obesity Consensus Working Group. Childhood obesity. *J Clin Endocrinol Metab*. 2005 Mar;90(3):1871-87. [PubMed](#)

US Preventive Services Task Force. Screening for obesity in children and adolescents: US Preventive Services Task Force recommendation statement. *Pediatrics*. 2010 Feb;125(2):361-7. [19 references] [PubMed](#)

Primary Health Components

Body mass index (BMI); weight classification; children

Denominator Description

The eligible population for the denominator is the number of children ages 2 through 17 years who had an outpatient care visit during the measurement year (January 1 to December 31). See the related "Denominator Inclusions/Exclusions" field.

Numerator Description

The eligible population for the numerator is the number of children ages 2 through 17 years old who had documentation of weight classification at an outpatient care visit during the measurement year (January 1 to December 31). See the related "Numerator Inclusions/Exclusions" field.

Evidence Supporting the Measure

Type of Evidence Supporting the Criterion of Quality for the Measure

A clinical practice guideline or other peer-reviewed synthesis of the clinical research evidence

A formal consensus procedure, involving experts in relevant clinical, methodological, public health and organizational sciences

One or more research studies published in a National Library of Medicine (NLM) indexed, peer-reviewed journal

Additional Information Supporting Need for the Measure

Importance

Childhood overweight and obesity are recognized as major medical and public health problems associated with serious medical complications over the life course, including conditions such as type 2 diabetes, metabolic syndrome, and hypertension (Speiser et al., 2005). As a result, early screening and identification of weight status in children is critical for both prevention and treatment of childhood overweight and obesity. Primary care providers measure weight and height at yearly visits throughout childhood, and, using these measures, can calculate BMI. Based on the sex- and age-specific growth charts for children developed by the Centers for Disease Control and Prevention [CDC], overweight is defined as a BMI percentile from the 85th to 94th percentile on sex-specific age-for-growth charts, and obesity is defined as a BMI percentile greater than or equal to 95th percentile (Barlow, 2007).

Prevalence of Obesity and Unhealthy Weight in Children

Significant increases in the prevalence of United States (U.S.) childhood obesity across both sexes were seen in the 1980s and 1990s (Ogden et al., 2012). For the 2011–2012 period, nearly 32% of children in the United States were reported to be overweight or obese (having a BMI greater than or equal to 85th percentile) and at least 17% were obese (having a BMI greater than or equal to 95th percentile) (Ogden et al., 2014). At the population level, this increase in prevalence is too rapid to be a genetic shift. Rather, changes in eating and physical activity behaviors are affecting the intake and expenditure of energy resulting in overweight and obesity (Barlow, 2007).

Cost of Obesity and Unhealthy Weight in Children

Excess weight in young people creates great economic burden. Children who are obese are approximately three times more expensive for the health care system than the average insured child, and children diagnosed with obesity are two to three times more likely to be hospitalized (Marder & Chang, 2006). In a study by Wang et al. (2008), the authors used projected overweight/obesity prevalence and national estimates of per capita excess health care costs of overweight/obesity to estimate that health care costs attributable to overweight/obesity in the entire U.S. population would reach between \$861 and \$957

billion by 2030, accounting for 16% to 18% of U.S. health care costs.

Pathology and Severity of Obesity and Unhealthy Weight in Children

Medical issues associated with obesity affect almost every organ of the body, though some conditions are without symptoms and signs (Barlow, 2007). Obese children are more likely to suffer from respiratory issues such as disordered breathing (Wing et al., 2003), which can lead to right ventricular hypertrophy and pulmonary hypertension, as well as inattention, poor academic performance, and enuresis (Barlow, 2007). Asthma also occurs more frequently among children who are obese (Barlow, 2007).

Gastrointestinal problems include nonalcoholic fatty liver disease (NAFLD), which is related to both obesity and diabetes (Barlow, 2007); gallstones (Kaechele et al., 2006); and gastroesophageal reflux disease and constipation, which are worsened by obesity (Barlow, 2007). Obese children are more likely to have endocrine disorders such as abnormal glucose metabolism (sometimes called pre-diabetes), which indicates higher risk for the development of diabetes (Li et al., 2009); type 2 diabetes mellitus, polycystic ovary syndrome, and hypothyroidism (Barlow, 2007). Cardiovascular problems for overweight/obese children include dyslipidemia (Lamb et al., 2011) and hypertension (Barlow, 2007). Orthopedic problems include Blount disease (a visible bowing of the lower extremities), slipped capital femoral epiphysis, and an increased risk of fractures, musculoskeletal pain, and orthopedic problems (Dietz, Gross, & Kirkpatrick, 1982; Manoff, Banffy, & Winell, 2005). Skin conditions include acanthosis nigricans, a chronic irritation and infection in the folds of the skin (Nguyen et al., 2001). Metabolic syndrome, a cluster of concurrent conditions (abnormal triglycerides, large waist circumference, and high blood pressure) that increase the risk of heart disease, stroke, and diabetes is not yet defined in children (Speiser et al., 2005). However, among severely obese children, the risk of developing metabolic syndrome has been estimated at 50% (Weiss et al., 2004).

Children who are obese also contend with psychiatric problems including depression, anxiety, and eating disorders (Barlow, 2007). One study found that among female adolescents who were obese, patterns of observation showed more adverse social, educational, and psychological correlates (Falkner et al., 2001). Children who are obese may also be at risk for academic difficulties, alcohol and tobacco use, premature sexual behavior, inappropriate dieting practices, and physical inactivity (Daniels et al., 2009). Increasing weight is associated with decreasing health-related quality of life, lower body satisfaction, and low self-esteem. Children who are overweight experience more teasing and are vulnerable to bullying (Daniels et al., 2009). Children share society's negative opinions about those who are overweight or obese, regardless of their own weight status or sex (Speiser et al., 2005). Their perceptions of obesity emphasize laziness, selfishness, lower intelligence, social isolation, poor social functioning, as well as low levels of perceived health, healthy eating, and activity. Children as young as 5 years of age are aware of their own levels of overweight, which affects their perceptions of appearance, athletic ability, social competence, and self-worth (Speiser et al., 2005). Research has also shown that children diagnosed with obesity are much more likely to be diagnosed with mental health disorders or bone and joint disorders than children who are not obese; they are also two-to-three times more likely to be hospitalized (Marder & Chang, 2006).

Being overweight or obese in early life also has implications for a child's future health. First, for a child who is overweight, medical risks include future or persistent obesity (Barlow, 2007; Daniels et al., 2009). The risk of an obese child becoming an obese adult is 25% at age 6 years, increasing to 75% during adolescence (Baker et al., 2010). Being overweight or obese in childhood and adolescence is also associated with increased risk of premature mortality and comorbidities in adulthood. A 2011 systematic review reports a significant association between child and adolescent overweight/obesity and premature mortality, with hazard ratios ranging from 1.4 to 2.9 (Reilly & Kelly, 2011). In addition, being overweight or obese as a child or adolescent is significantly associated with increased risk of cardiometabolic morbidity (including diabetes, hypertension, heart disease, and stroke) in later life, with hazard ratios ranging from 1.1 to 5.1, as well as increased risk of asthma in adulthood and polycystic ovary syndrome in adult women (Reilly & Kelly, 2011). Obesity in adolescence is associated with negative self-image that persists into adulthood (Dietz, 1998). These children are also at long-term higher risk for chronic conditions such as breast, colon, and kidney cancer; musculoskeletal disorders; and gall bladder disease (Daniels et al., 2009). Childhood obesity contributes to a significant and increasing burden of chronic

disease, rising health care costs, disability, and premature death.

Performance Gap

The rates of BMI percentile documentation by providers vary greatly: among 10 U.S. health plans and care delivery systems with total enrollments ranging from 175,000 to 3.2 million members, the documentation of BMI percentile for children ages 2 through 17 years of age ranged from 21% to 81%, with a median documentation rate of 71% (Arterburn et al., 2010). Other studies report physicians documenting BMI percentile for approximately 50% of pediatric patients (Huang et al., 2011; Klein et al., 2010). Rates for weight classification documentation are consistently low. In two studies of pediatric primary care visits, providers documented weight status in 10% to 14% of charts (Shaikh et al., 2010; Lazorick et al., 2011). In two studies of children with a BMI greater than or equal to 95th percentile, physicians documented their weight status ("obese") in only 18% to 28% of patients (Dilley et al., 2007; Patel et al., 2010). Taken together, these findings suggest a significant performance gap exists in provider documentation of both BMI percentile and weight status. Certainly, this information is not being documented in children as often as recommended by national guidelines.

See the original measure documentation for additional evidence supporting the measure.

Evidence for Additional Information Supporting Need for the Measure

Arterburn DE, Alexander GL, Calvi J, Coleman LA, Gillman MW, Novotny R, Quinn VP, Rukstalis M, Stevens VJ, Taveras EM, Sherwood NE. Body mass index measurement and obesity prevalence in ten U.S. health plans. *Clin Med Res*. 2010 Dec;8(3-4):126-30. [PubMed](#)

Baker JL, Farpour-Lambert NJ, Nowicka P, Pietrobelli A, Weiss R, Childhood Obesity Task Force of the European Association for the Study of Obesity. Evaluation of the overweight/obese child--practical tips for the primary health care provider: recommendations from the Childhood Obesity Task Force of the European Association for the Study of Obesity. *Obes Facts*. 2010;3(2):131-7. [PubMed](#)

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Falkner NH, Neumark-Sztainer D, Story M, Jeffery RW, Beuhring T, Resnick MD. Social, educational, and psychological correlates of weight status in adolescents. *Obesity Res*. 2001 Jan;9(1):32-42. [PubMed](#)

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Kaechele V, Wabitsch M, Thieme D, Kessler AL, Haenle MM, Mayer H, Kratzer W. Prevalence of gallbladder stone disease in obese children and adolescents: influence of the degree of obesity, sex, and pubertal development. *J Pediatr Gastroenterol Nutr.* 2006 Jan;42(1):66-70. [PubMed](#)

Klein JD, Sesselberg TS, Johnson MS, O'Connor KG, Cook S, Coon M, Homer C, Krebs N, Washington R. Adoption of body mass index guidelines for screening and counseling in pediatric practice. *Pediatrics.* 2010 Feb;125(2):265-72. [PubMed](#)

Lamb MM, Ogden CL, Carroll MD, Lacher DA, Flegal KM. Association of body fat percentage with lipid concentrations in children and adolescents: United States, 1999-2004. *Am J Clin Nutr.* 2011 Sep;94(3):877-83. [PubMed](#)

Lazorick S, Peaker B, Perrin EM, Schmid D, Pennington T, Yow A, DuBard CA. Prevention and treatment of childhood obesity: care received by a state Medicaid population. *Clin Pediatr.* 2011 Sep;50(9):816-26. [PubMed](#)

Li C, Ford ES, Zhao G, Mokdad AH. Prevalence of pre-diabetes and its association with clustering of cardiometabolic risk factors and hyperinsulinemia among U.S. adolescents: National Health and Nutrition Examination Survey 2005-2006. *Diabetes Care.* 2009 Feb;32(2):342-7. [PubMed](#)

Manoff EM, Banffy MB, Winell JJ. Relationship between Body Mass Index and slipped capital femoral epiphysis. *J Pediatr Orthop.* 2005 Nov-Dec;25(6):744-6. [PubMed](#)

Marder W, Chang S. Childhood obesity: costs, treatment patterns, disparities in care, and prevalent medical conditions. Thomson Medstat Research Brief; 2006.

Nguyen TT, Keil MF, Russell DL, Pathomvanich A, Uwaifo GI, Sebring NG, Reynolds JC, Yanovski JA. Relation of acanthosis nigricans to hyperinsulinemia and insulin sensitivity in overweight African American and white children. *J Pediatr.* 2001 Apr;138(4):474-80. [PubMed](#)

Ogden CL, Carroll MD, Kit BK, Flegal KM. Prevalence of childhood and adult obesity in the United States, 2011-2012. *JAMA.* 2014 Feb 26;311(8):806-14. [PubMed](#)

Ogden CL, Carroll MD, Kit BK, Flegal KM. Prevalence of obesity and trends in body mass index among US children and adolescents, 1999-2010. *JAMA.* 2012 Feb 1;307(5):483-90. [PubMed](#)

Patel AI, Madsen KA, Maselli JH, Cabana MD, Stafford RS, Hersch AL. Underdiagnosis of pediatric obesity during outpatient preventive care visits. *Acad Pediatr.* 2010 Nov-Dec;10(6):405-9. [PubMed](#)

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Reilly JJ, Kelly J. Long-term impact of overweight and obesity in childhood and adolescence on morbidity and premature mortality in adulthood: systematic review. *Int J Obes (Lond).* 2011 Jul;35(7):891-8. [PubMed](#)

Shaikh U, Nelson R, Tancredi D, Byrd RS. Presentation of body mass index within an electronic health record to improve weight assessment and counselling in children and adolescents. *Inform Prim Care.* 2010;18(4):235-44. [PubMed](#)

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Shalitin S, Sultan C, Stein D, Vardi P, Werther GA, Zadik Z, Zuckerman-Levin N, Hochberg Z, Obesity Consensus Working Group. Childhood obesity. *J Clin Endocrinol Metab*. 2005 Mar;90(3):1871-87. [PubMed](#)

Wang Y, Beydoun MA, Liang L, Caballero B, Kumanyika SK. Will all Americans become overweight or obese? Estimating the progression and cost of the US obesity epidemic. *Obesity (Silver Spring)*. 2008 Oct;16(10):2323-30. [PubMed](#)

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Wing YK, Hui SH, Pak WM, Ho CK, Cheung A, Li AM, Fok TF. A controlled study of sleep related disordered breathing in obese children. *Arch Dis Child*. 2003 Dec;88(12):1043-7. [PubMed](#)

Extent of Measure Testing

Reliability

Data and Methods. Testing data were obtained through an audit of medical records maintained by HealthCore, Inc. HealthCore is an independent subsidiary of Anthem, Inc., the largest health benefits company/insurer in the United States. HealthCore owns and operates the HealthCore Integrated Research Database (HIRD), a longitudinal database of medical and pharmacy claims and enrollment information for members from 14 geographically diverse Blue Cross and/or Blue Shield Health Plans in the Northeast, South, West, and Central regions of the United States, with members living in all 50 states. In total, the HIRD includes approximately 59 million individuals between January 2006 and June 2014.

More than 12 million members were enrolled at some point during the 2013 measurement year for this study, among which 2.3 million were aged 2 to 18 years old. There were 637,100 children aged 2 to 18 years old with a routine outpatient encounter in 2013 who were currently enrolled and were fully insured. This group was narrowed to a subset who had a provider with a specialty of pediatric medicine or general practice/family practice (451,003). One child per family was then randomly selected, resulting in 293,741 eligible children from all 50 states, as well as the District of Columbia and territories such as Puerto Rico and the Virgin Islands.

A simple random sample (SRS) was used to select 27,000 candidates for a parent survey, of which 26,569 (98%) had valid contact information. From this group, a total of 1,580 parent surveys were completed, of which 402 parents reported that their eligible child had a BMI greater than or equal to 85th percentile. Additionally, an independent SRS of 750 candidates was selected to provide additional cases for medical record abstraction to ensure the study goal for abstracted charts would be achieved; 722 children from this group had valid contact information. Combining these two groups, medical records were requested for review for 1,124 (402+722) children. In total, 600 medical records were reviewed and abstracted.

Once subjects were identified, patient medical records were requested from provider offices and health care facilities; these records were sent to a centralized location for data abstraction. Trained nurse or pharmacist medical record abstractors collected and entered information from paper copies of the medical records into a password-protected database. To help ensure consistency of data collection, the medical record abstractors were trained on the study's design and presented with a standardized data collection form designed to minimize the need to make subjective judgments during the abstraction process. In addition, data entered onto a scanner form and subsequently scanned was reviewed through a series of quality checks.

Reliability of medical record data was determined through re-abstraction of patient record data to calculate the inter-rater reliability (IRR). Broadly, IRR is the extent to which the abstracted information is collected in a consistent manner. Low IRR may be a sign of poorly executed abstraction procedures, such as ambiguous wording in the data collection tool, inadequate abstractor training, or abstractor fatigue.

For this measure, the medical record data collected by two abstractors was individually compared with the data obtained by a senior abstractor to gauge the IRR for each abstractor. Any differences were remedied by review of the chart. IRR was determined by calculating both percent agreement and Cohen's Kappa statistic.

Result. Data were abstracted from the medical records of 600 children meeting denominator criteria for this measure. Of these, 59 records (10%) from the two abstractors were reviewed for IRR. Agreement was assessed for four measure variables: documentation of BMI percentile, documentation of weight classification, documentation of height, and documentation of weight (necessary to calculate BMI).

Table 6 in the original measure documentation shows the percent agreement and Kappa statistic for each variable. Abstractor agreement for documentation of BMI percentile was 98% with a Kappa statistic of 0.982; agreement for documentation of weight classification was 93%, with a Kappa statistic of 0.924. Agreement for documentation of height and documentation of weight were both 100%, with Kappa statistics of 1. These results indicate a very high level of IRR was achieved for all measure variables.

Validity

Face Validity. Face validity is the degree to which the measure construct characterizes the concept being assessed. The face validity of this measure was established by a national panel of experts and advocates for families of children with high BMI convened by the Quality Measurement, Evaluation, Testing, Review, and Implementation Consortium (Q-METRIC). The Q-METRIC expert panel included nationally recognized experts in childhood obesity, representing pediatrics, nephrology, nutrition and dietetics, endocrinology, gastroenterology, health behavior/education, and family advocacy. In addition, measure validity was considered by experts in state Medicaid program operations, health plan quality measurement, health informatics, and health care quality measurement. In total, the Q-METRIC High BMI Follow-Up panel included 17 experts, providing a comprehensive perspective on childhood obesity and the measurement of quality metrics for states and health plans.

The Q-METRIC expert panel concluded that this measure has a high degree of face validity through a detailed review of concepts and metrics considered to be essential to effective management and treatment of childhood obesity. Concepts and draft measures were rated by this group for their relative importance. This measure was very highly rated, receiving an average score of 8.6 (with 9 as the highest possible score).

Abstracted Medical Record Data. This measure was tested using medical record data. This source is considered the gold standard for clinical information; our findings indicate that these data have a high degree of face validity and reliability. This measure was tested among a total of 600 children ages 2 through 17 years of age with an outpatient care visit during the measurement year (refer to Table 7 in the original measure documentation). Overall, 32.0% of eligible children had documentation of BMI percentile and 36.5% of children had documentation of weight classification in the medical record. A total of 191 children (31.8%) had documentation of both BMI percentile and weight classification in the medical record. In addition, 86.2% had documentation of height and 96.0% had documentation of weight in the medical record.

Evidence for Extent of Measure Testing

Quality Measurement, Evaluation, Testing, Review, and Implementation Consortium (Q-METRIC). Basic measure information: documentation of BMI percentile and weight classification for children. Ann Arbor (MI): Quality Measurement, Evaluation, Testing, Review, and Implementation Consortium (Q-METRIC); 2015 Apr. 50 p.

State of Use of the Measure

State of Use

State of Use

Current routine use

Current Use

not defined yet

Application of the Measure in its Current Use

Measurement Setting

Ambulatory/Office-based Care

Professionals Involved in Delivery of Health Services

not defined yet

Least Aggregated Level of Services Delivery Addressed

Individual Clinicians or Public Health Professionals

Statement of Acceptable Minimum Sample Size

Specified

Target Population Age

Age 2 through 17 years

Target Population Gender

Either male or female

National Strategy for Quality Improvement in Health Care

National Quality Strategy Aim

Better Care

National Quality Strategy Priority

Health and Well-being of Communities

Prevention and Treatment of Leading Causes of Mortality

Institute of Medicine (IOM) National Health Care Quality Report Categories

IOM Care Need

Staying Healthy

IOM Domain

Effectiveness

Data Collection for the Measure

Case Finding Period

January 1 to December 31 of the measurement year

Denominator Sampling Frame

Patients associated with provider

Denominator (Index) Event or Characteristic

Encounter

Patient/Individual (Consumer) Characteristic

Denominator Time Window

not defined yet

Denominator Inclusions/Exclusions

Inclusions

The eligible population for the denominator is the number of children ages 2 through 17 years who had an outpatient care visit during the measurement year (January 1 to December 31).

Note: Refer to Table 4 in the original measure documentation for codes to identify outpatient care visits.

Exclusions

Inpatient stays, emergency department visits, and urgent care visits are excluded from the calculation.

A diagnosis of pregnancy during the measurement year excludes the patient from the calculation.

Exclusions/Exceptions

not defined yet

Numerator Inclusions/Exclusions

Inclusions

The eligible population for the numerator is the number of children ages 2 through 17 years old who had documentation of weight classification at an outpatient care visit during the measurement year (January 1 to December 31).

Using BMI percentile, children can be classified into categories as shown in Table 1 in the original measure documentation. Table 2 in the original measure documentation lists categories based on body mass index (BMI) score, which can only be used for children ages 16 and 17 years old. Weight classification documentation is a written note of BMI percentile or score from medical records. Documentation in the medical records must include at least one classification from any of the lists below:

"Underweight," "Overweight," "Obese"

OR

"Normal weight," "Health weight," "Abnormal weight," "Unhealthy weight"

OR

"BMI less than 5th percentile," "BMI 5th through 84th percentile," "BMI 85th through 94th percentile," "BMI greater than or equal to 95th percentile"

OR

"BMI score less than 18.5," "greater than or equal to 18.5 and less than 25," "greater than or equal to 25 and less than 30," "greater than or equal to 30" (for children 16 and 17 years of age only)

For medical records, acceptable documentation consists of International Classification of Diseases, 9th Revision (ICD-9) codes for "obesity" or "abnormal weight gain" (refer to Table 3 in the original measure documentation for ICD-9 codes).

Note: Refer to Table 4 in the original measure documentation for codes to identify outpatient care visits.

Exclusions

Documentation is insufficient if it consists only of BMI, BMI percentile, weight, height, weight percentile, or height percentile. These individual values do not qualify as a numerator event.

Numerator Search Strategy

Fixed time period or point in time

Data Source

Electronic health/medical record

Paper medical record

Type of Health State

Does not apply to this measure

Instruments Used and/or Associated with the Measure

Unspecified

Computation of the Measure

Measure Specifies Disaggregation

Does not apply to this measure

Scoring

Rate/Proportion

Interpretation of Score

Desired value is a higher score

Allowance for Patient or Population Factors

not defined yet

Standard of Comparison

not defined yet

Identifying Information

Original Title

Documentation of BMI percentile and weight classification for children. Rate 2: weight classification.

Measure Collection Name

High Body Mass Index (BMI) in Children Follow-up Measures

Submitter

Quality Measurement, Evaluation, Testing, Review, and Implementation Consortium (Q-METRIC) -
Academic Affiliated Research Institute

Developer

Quality Measurement, Evaluation, Testing, Review, and Implementation Consortium (Q-METRIC) -
Academic Affiliated Research Institute

Funding Source(s)

This work was funded by the Agency for Healthcare Research and Quality (AHRQ) and the Centers for Medicare & Medicaid Services (CMS) under the Children's Health Insurance Program Reauthorization Act (CHIPRA) Pediatric Quality Measures Program Centers of Excellence grant number U18 HS020516.

Composition of the Group that Developed the Measure

High BMI in Children Follow-Up Expert Panels

Representative Panel

Adam Becker, PhD, MPH, Executive Director, Consortium to Lower Obesity in Chicago Children (CLOCC), Chicago, IL

Craig Belsha, MD, Professor of Pediatrics, St. Louis University, Director of the Pediatric Hypertension Program, SSM Cardinal Glennon Children's Medical Center, St. Louis, MO

Nancy Butte, PhD, MPH, RD, Professor of Pediatrics, USDA/ARS Children's Nutrition Research Center, Department of Pediatrics, Baylor College of Medicine, Houston, TX

Elena Fuentes-Afflick, MD, MPH, Chief of Pediatrics, San Francisco General Hospital, Vice Dean for Academic Affairs and Faculty Development, Vice Chair and Professor of Pediatrics, Epidemiology and Biostatistics, University of California San Francisco, San Francisco, CA

Suzanne Lazorick, MD, MPH, Assistant Professor of Pediatrics and Public Health, Brody School of Medicine, East Carolina University, Greenville, NC

Esther F. Myers, PhD, RD, Chief Science Officer, Academy of Nutrition and Dietetics, St. Louis, MO

Stephen Pont, MD, MPH, FAAP, Assistant Professor of Pediatrics, University of Texas Southwestern Medical Center, Austin, TX

Dennis Styne, MD, Professor of Pediatrics, Director of Pediatric Endocrine Fellowship Program, University of California Davis School of Medicine, Davis, CA

Miriam Vos, MD, MSPH, Assistant Professor of Pediatrics, Division of GI, Hepatology and Nutrition, Emory University School of Medicine, Research Program Director, Child Wellness, Children's Healthcare of Atlanta, Atlanta, GA

Nora Wells, MD, Director of Programs, Co-Director of National Center for Family/Professional Partnerships, Family Voices, Boston, MA

Feasibility Panel

Cathy Call, BSN, MEd, MSN, Senior Policy Analyst and Director for Health Quality Research, Altarum Institute, Alexandria, VA

J. Mitchell Harris, PhD, Director of Research and Statistics, Children's Hospital Association, (formerly NACHRI), Alexandria, VA

Don Lighter, MD, MBA, FAAP, FACHE, Director, The Institute for Health Quality Research and Education, Knoxville, TN

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Financial Disclosures/Other Potential Conflicts of Interest

Unspecified

Adaptation

This measure was not adapted from another source.

Date of Most Current Version in NQMC

2015 Apr

Measure Maintenance

Unspecified

Date of Next Anticipated Revision

Unspecified

Measure Status

This is the current release of the measure.

The measure developer reaffirmed the currency of this measure in January 2016.

Measure Availability

Source available from the [Quality Measurement, Evaluation, Testing, Review, and Implementation Consortium \(Q-METRIC\) Web site](#) . Support documents are also available.

For more information, contact Q-METRIC at 300 North Ingalls Street, Room 6C08, SPC 5456, Ann Arbor, MI 48109-5456; Phone: 734-232-0657; Fax: 734-764-2599.

NQMC Status

This NQMC summary was completed by ECRI Institute on September 29, 2015. The information was verified by the measure developer on November 2, 2015.

The information was reaffirmed by the measure developer on January 7, 2016.

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Production

Source(s)

Quality Measurement, Evaluation, Testing, Review, and Implementation Consortium (Q-METRIC). Basic measure information: documentation of BMI percentile and weight classification for children. Ann Arbor (MI): Quality Measurement, Evaluation, Testing, Review, and Implementation Consortium (Q-METRIC); 2015 Apr. 50 p.

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